

EXPOSURE CONTROL ON THE RIG FLOOR

The Architecture of Distance, Applied to *Drill Pipe*

A field doctrine reading of the HSF Drilling Push-Pull Tools collection — how four recurring points of hand exposure on the rig floor are engineered out through a single, repeatable interface model.

10

TOOLS IN
COLLECTION

04

EXPOSURE
POINTS

02

RIG TYPES — LAND &
OFFSHORE

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— IN THIS EDITION

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The collection is read here in three movements: the exposure pattern itself, the interface model that resolves it, and the ten tools that put the model to work across the pipe handling cycle.

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— OPERATIONAL CONTEXT

Where hands get exposed in drill pipe handling

Rig floor hand injuries happen because precision is required at close range, and hands are the default tool for providing it. Across normal operations, four distinct points place hands routinely in positions of exposure.

01

PIPE POSITIONING DURING TRIPPING

During trips in and out, pipe stands must be guided to the rotary and into the elevator. Final positioning requires hands to direct and stabilise — placing them between the stand and adjacent structures.

02

SETBACK & RACK HANDLING

Standing back pipe and racking stands in the fingerboard requires directional control that can't be achieved from a safe distance. Floorhands guide each stand into position alongside already-racked pipe.

03

CONNECTION ALIGNMENT — PIN TO BOX

Aligning the pin end with the box end at the rotary requires hands to position and hold pipe while the top drive engages. The connection point sits between two heavy, moving components.

04

PIPE ROTATION & DIRECTIONAL CONTROL

During make-up and break-out, pipe must be held against the torque of spinning tools. Stopping spin-out and redirecting drift typically requires hands on the pipe at the point of movement.

None of these four points are unusual or poorly run. They are simply where the handling task and the hazard occupy the same physical space — and where, absent a different interface, the hand is what closes that gap.

METHOD

The task interface model: control without *hand contact*

The question at each of the four exposure points is never whether control is needed — it is. The question is whether that control has to be delivered by a bare hand at close range, or whether something else can sit in that position instead.



WITHOUT THE INTERFACE, THE HAND OCCUPIES THE MIDDLE POSITION DIRECTLY

DIRECTED MOVEMENT FROM DISTANCE

Each tool extends the operator's ability to push, pull, guide, or stabilise pipe without hand contact at the hazard point. The handling task stays the same — only the hand's position changes.

CONSISTENT ACROSS CREWS

Individual technique varies with fatigue and experience. The interface standardises the engagement point and body position across shift changes and crew rotations.

OUT OF PINCH ZONES & LINE-OF-FIRE

Tools are built around the specific geometry of each task — grip angle, pipe diameter, load direction — so the hand stays clear while the tool engages at the hazard point.

NO DISRUPTION TO TEMPO

The interface sits inside the existing handling sequence — no added steps, no slowdown, no additional personnel. It replaces hand contact at specific moments; everything else proceeds as normal.

PRODUCT DESIGN

Designed for rig floor operations, not a lab

The rig floor is not a controlled environment. The interface model only holds up if the tool carrying it survives wet decks, oily pipe, gloved hands, and crews working at pace — so that is the standard each tool in this collection is built to.

BUILT FOR REAL DRILLING ENVIRONMENTS

Designed to function on an active rig floor — wet decks, oily pipe, gloved hands, and limited space. No modifications required for standard drilling operations.

MULTIPLE HANDLING POINTS, ONE RIG

Covers the full pipe handling cycle — floor level, setback, fingerboard, connection, and casing — so controlled handling is available at every exposure point.

REPEATABLE, CONSISTENT HANDLING

The interface standardises how tasks are performed across shift changes and crew rotations. Contact point and body position remain constant regardless of who is on the floor.

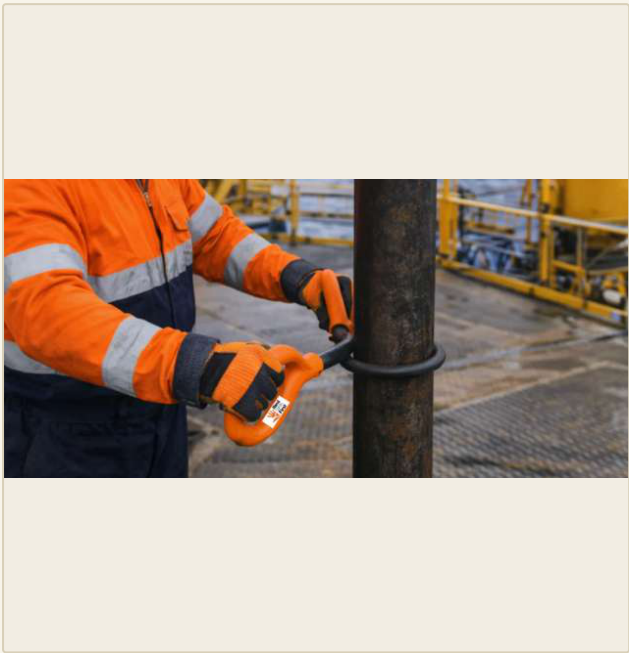
FITS WITHIN EXISTING WORKFLOWS

Deployed at specific moments within the existing sequence. No procedure rewrites, no additional personnel — the workflow stays the same, the hand position changes.

What follows is the model applied tool by tool — grouped by where on the rig floor each one sits in the pipe handling cycle, from first pickup at the V-door through to casing run-in and deck cargo movement.

— EXPOSURE POINT 01

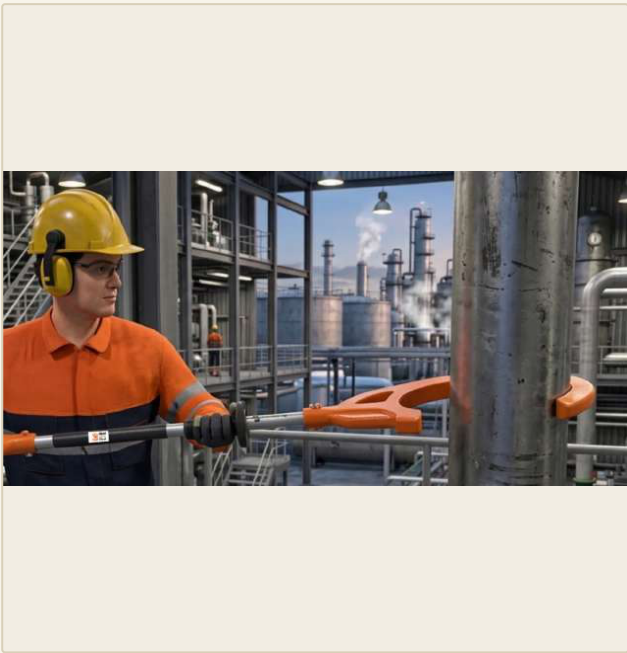
Tripping & floor-level handling



IN STOCK HANDS-OFF TOOLS

Pipe Wipe Tool

Applies contact to the pipe OD during wiping operations without hand-to-pipe contact. Maintains consistent wipe pressure around the pipe circumference while the operator controls position from outside the wiper's immediate zone.



IN STOCK PUSH PULL TOOL

Pipe Grab Tool

Engages and controls the pipe at the rig floor during tripping. Allows the floorhand to push, pull, and position the drill pipe stand without hand contact at the rotary table or elevator zone. Maintains directional grip through the full range of floor-level handling.



Both tools occupy the same exposure point from different ends of the stroke — the Pipe Wipe Tool engages while pipe is stationary at the rotary, the Pipe Grab Tool engages while it is in motion across the floor. Between them, the floorhand never needs bare-hand contact at any stage of a routine trip.

IN STOCK

PUSH PULL TOOL

Drill Pipe Handling Tool



Controls drill pipe during tripping operations from pickup to placement. Allows the floorhand to direct and stabilise pipe movement at the rotary level while maintaining a working position clear of the elevator link travel path and rotating assembly. Where the Pipe Grab Tool engages the stand during floor-level movement, this tool carries that same directed control through to the rotary — covering the trip from the moment pipe leaves the rack board to the moment it reaches the connection point.

EXPOSURE POINT

Tripping In & Out — Rotary Level

CLEARED ZONE

Elevator Link Travel Path, Rotating Assembly

RIG TYPE

Land & Offshore



This is the same interface principle stated in the Task Interface Model, applied to the single longest-duration exposure window in the tripping sequence. The hand that would otherwise track the stand all the way from rack board to rotary instead stays on the tool throughout — one consistent grip, one consistent body position, for the full length of the trip.

— EXPOSURE POINT 02

Setback & rack-back handling

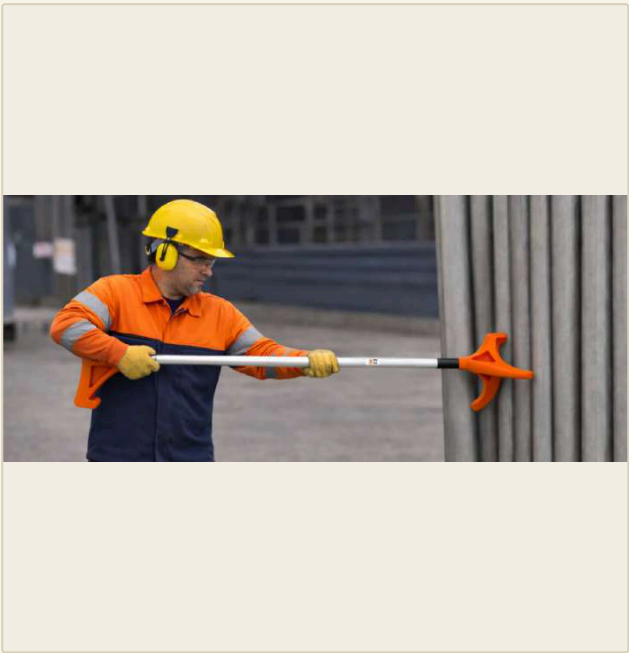
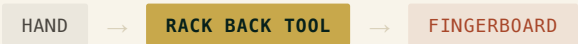


IN STOCK

DRILLING TOOL

Rack Back Tool

Positions drill pipe stands into the rack board finger slots at the derrickman level without requiring direct hand contact between adjacent stands. Guides the stand into its racked position with controlled lateral movement.

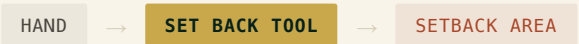


IN STOCK

PUSH PULL TOOL

Pipe Set Back Tool

Positions drill pipe stands into the setback area on the rig floor during stand-building operations. Guides each stand into its standing position with directional control, without hands between the pipe and adjacent stands or floor structures.



Setback and rack-back sit at opposite ends of the rig — floor level and derrickman level — but share the same exposure pattern: a stand closing in beside pipe that is already in position. Both tools resolve it the same way, by giving the operator a controlled point of contact on the moving stand itself.

Storage Station & Starter Kit



The interface model depends on one condition that's easy to overlook: the tool has to be where the hand would otherwise have been reaching. The Storage Station provides a designated storage and deployment point for HSF drilling tools on the rig floor, keeping every tool in this collection accessible at point-of-use across tripping, setback, and connection operations — so consistent tool deployment isn't left to whether someone remembered to bring the right tool to the right spot.

FUNCTION	COVERAGE	ROLE IN THE MODEL
Rig Floor Storage & Deployment Point	Tripping, Setback, Connection Operations	Removes the Excuse to Reach Bare-Handed

An interface only works if it's reached for in the moment, not located back at a tool crib or a different deck. Placing the full set within arm's reach of where each task actually happens is what keeps the model intact under time pressure, not just on a calm shift.

— EXPOSURE POINTS 03 & 04

Connection & rotation control

The highest-consequence point in the handling cycle: two heavy, moving components closing on each other while torque is live.

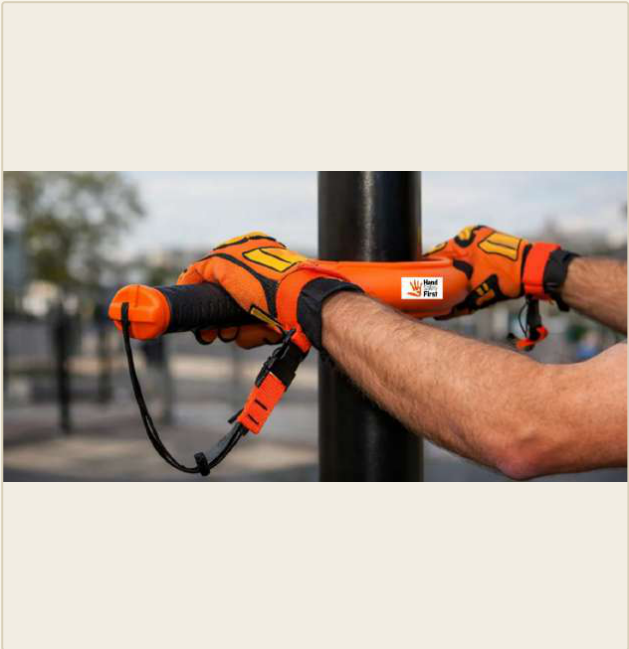


IN STOCK

HAND SAFETY TOOL

Twist Control Tool

Controls pipe rotation during connection make-up and break-out without hands on the spinning joint. Guides directional movement of the pipe as torque is applied, stopping spin-out and redirecting drift from a controlled handling position.



IN STOCK

HANDS OFF TOOLS

Drill Pipe Connection Guide

Guides pin-end alignment into the box end at the connection point during tripping operations. Positions the pipe for thread engagement without hands between the two joints — the most confined, highest-consequence point of make-up.



Make-up and break-out are read here as one continuous exposure window with two phases: alignment before torque is applied, and rotation control once it is. The Connection Guide owns the first phase, the Twist Control Tool owns the second — together covering the joint from first contact to final torque.

EXTENDING THE MODEL BEYOND DRILL PIPE

Casing run-in & deck cargo

The same interface logic applied to two further hazard surfaces on the rig: the slip landing zone during casing runs, and the leading edge of cargo during deck handling.

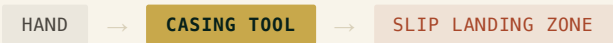


IN STOCK

PUSH PULL TOOL

Drill Pipe Casing Tool

Handles and positions casing string during run-in operations at the rotary. Controls pipe body movement as each joint is lowered and landed in the slips, allowing hands-off guidance through the landing zone.



IN STOCK

PUSH PULL TOOL

Cargo Handling Tool

Pushes and pulls cargo items across the rig deck and floor without hands at the leading edge of the load. Provides directional control of skids, equipment boxes, and loose gear during deck handling, keeping hands clear of crush zones.



Neither hazard is unique to drilling — slip zones and crush zones exist anywhere heavy items are landed or moved by hand. Including them here completes the model's claim: the same hand-to-tool-to-hazard substitution holds for any point on the rig where a hand would otherwise sit between an operator and a moving load.

REFERENCE

Coverage matrix

All ten tools read against the exposure point they address and the hazard surface the interface clears the hand from.

#	TOOL	EXPOSURE POINT	CLEARED HAZARD
01	Pipe Wipe Tool	Pipe wiping, OD contact	Hand-to-pipe contact at circumference
02	Twist Control Tool	Make-up & break-out	Spinning joint, torque drift
03	Rack Back Tool	Fingerboard racking	Adjacent racked stands
04	Storage Station & Starter Kit	Point-of-use deployment	Improvised reach for absent tools
05	Pipe Set Back Tool	Setback / stand building	Pipe-to-stand & floor structure contact
06	Pipe Grab Tool	Tripping, floor-level handling	Rotary table, elevator zone
07	Drill Pipe Handling Tool	Tripping, rotary level	Elevator link travel path, rotating assembly
08	Drill Pipe Connection Guide	Pin/box alignment	Confined point of thread engagement
09	Drill Pipe Casing Tool	Casing run-in	Slip landing zone
10	Cargo Handling Tool	Deck cargo movement	Crush zones at load leading edge

Read down the right-hand column and a pattern holds across all ten rows: in every case, the task itself was never optional — guiding, aligning, gripping, and stabilising pipe are inherent to drilling. What moves is only where the hand sits relative to the hazard while that task gets done.

— GET IN TOUCH

Discuss your *drilling application*

Whether you're equipping a single rig floor or standardising the interface model across a fleet, HSF can help identify the tools that fit your specific handling operations — application-specific guidance, not generic recommendations.

*“Tools built for real drilling environments —
not a lab standard.”*

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